

## 1319 - Monkey Tradition

In 'MonkeyLand', there is a traditional game called "Bamboo Climbing". The rules of the game are as follows:

- 1) There are  $N$  monkeys who play this game and there are  $N$  bamboos of equal heights. Let the height be  $L$  meters.
- 2) Each monkey stands in front of a bamboo and every monkey is assigned a different bamboo.
- 3) When the whistle is blown, the monkeys start climbing the bamboos and they are not allowed to jump to a different bamboo throughout the game.
- 4) Since they are monkeys, they usually climb by jumping. And in each jump, the  $i^{\text{th}}$  monkey can jump exactly  $p_i$  meters ( $p_i$  is a prime). After a while when a monkey finds that he cannot jump because one more jump may get him out of the bamboo, he reports the remaining length  $r_i$  that he is not able to cover.
- 5) And before the game, each monkey is assigned a distinct  $p_i$ .
- 6) The monkey, who has the lowest  $r_i$ , wins.

Now, the organizers have found all the information of the game last year, but unluckily they haven't found the height of the bamboo. To be more exact, they know  $N$ , all  $p_i$  and corresponding  $r_i$ , but not  $L$ . So, you came forward and found the task challenging and so, you want to find  $L$ , from the given information.

### Input

Input starts with an integer  $T$  ( $\leq 10000$ ), denoting the number of test cases.

Each case starts with a line containing an integer  $n$  ( $1 \leq n \leq 12$ ). Each of the next  $n$  lines contains two integers  $p_i$  ( $1 < p_i < 40$ ,  $p_i$  is a prime) and  $r_i$  ( $0 < r_i < p_i$ ). All  $p_i$  will be distinct.

### Output

For each case, print the case number and the minimum possible value of  $L$  that satisfies the above conditions. If there is no solution, print 'Impossible'.

Sample Input	Output for Sample Input
2	Case 1: 69
3	Case 2: 113
5 4	
7 6	
11 3	
4	
2 1	
3 2	
5 3	
7 1	